

REMARKS

Applicants submit this Amendment in reply to the Office Action mailed September 29, 2004.

In this Amendment, Applicants have cancelled claim 9, without prejudice or disclaimer, and rewritten claim 1 to include the subject matter of claim 9. Claim 1 is the sole non-withdrawn independent claim.

The originally-filed specification, claims, abstract, and drawings fully support the subject matter of rewritten claim 1. No new matter was introduced.

In the Office Action, claims 1, 4, 5, and 9 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,415,817 to Shiao et al. ("Shiao") in view of U.S. Patent No. 5,543,966 to Meyers ("Meyers") and U.S. Patent No. 6,215,591 to Ueda et al. ("Ueda"), and claim 2 was rejected under 35 U.S.C. §103(a) as being unpatentable over Shiao in view of Meyers and Ueda and further in view of U.S. Patent No. 5,978,140 to Maruyama ("Maruyama"). Applicants have cancelled claim 9, without prejudice or disclaimer, rendering the rejection of claim 9 moot. With regards to the rest of the claims, Applicants respectfully traverse these rejections for at least the following reasons.

No combination of Shiao, Meyers, Ueda, and Maruyama discloses or suggests the claimed invention. For example, independent claim 1 recites an optical element molded between a first die and a second die which are jointed along a partition line including, among other aspects, "wherein the second edge portion is positioned at the partition line between the first die and the second die."

Shiao fails to disclose the claimed second edge portion positioned at a partition line between a first die and a second die. Shiao discloses a partition line between mold die 4 and first insert 10 configured such that the separation of mold die 4 and first insert 10 occurs along the convex surface, i.e., the portion of the lens adjacent to concave surface 6 of mold die 4. (Fig. 4). Assuming *arguendo* that this convex surface corresponds to the “first optical surface on which a diffractive structure is provided,” as recited in claim 1, such a separation is unacceptable, as the separation of mold die 4 from the corresponding portion of the lens could damage or distort the diffractive portions of the convex lens surface.

Meyers does not remedy this deficiency of Shiao, as even assuming *arguendo* that the surfaces of the lens adjacent to mold surfaces S1 and S2 of Meyers correspond to the first optical surface and the second optical surface, respectively, of the claimed invention, as set in the Declaration of Hiroyuki Hattori submitted with the Amendment After Final filed October 2, 2003, the die separation first occurs from the convex surface of the lens, i.e., the portion of the lens adjacent to mold surface S1, so that mold surface S2 does not damage the diffractive surface of the portion of the lens adjacent to mold surface S2. Accordingly, Meyers also does not disclose or suggest “wherein the second edge portion is positioned at the partition line between the first die and the second die” as recited in independent claim 1.

Ueda does not remedy this deficiency of Shiao, as there is no motivation to combine the references in this manner. Shiao and Meyers are directed to methods of **injection molding** plastic (col. 1, lines 7-10 of Shiao ; col. 4, line 67 to col. 5, line 3 of Meyers), or in the alternative for Meyers, creating a diffractive zone pattern on the lens

surface by diamond turning or cutting. (Col. 5, lines 3-5). Ueda is directed to a method of **press forming** heated glass. (Col. 5, lines 8-12). Accordingly, because there is no motivation to modify Shiao and Meyers in view of Ueda in this manner, Applicants respectfully request the withdrawal of the Section 103(a) rejections.

Furthermore, on page 4 of the Office Action, the Examiner admits that “Shiao et al. lacks a diffractive structure provided on the convex optical surface” and that the “combined teachings of Shiao et al. and Meyers lack the first surface being the convex surface on which the diffractive structure is provided.” The Examiner then asserts:

However, it is well known in the art that diffractive structure may be provided on one or both surfaces of a lens to produce a diffractive optical element. For example, Ueda et al. teaches a conventional diffractive optical element functioning as a lens (See for example Figure 4), wherein both surfaces, and in particular the convex surface, of the lens incorporates diffractive grating structures (See 20, 21 in Figure 4). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have diffractive structure provided on the convex optical surface, as taught by Meyers and Ueda et al., for the purpose of providing enhanced optical characteristics to the lens, such as higher numerical aperture or variable focal length.

However, because both Shiao and Meyers disclose separating the lens from the mold along the convex surface, there would be no motivation for placing the diffractive structure of Ueda on such a convex surface. This is because, as set forth on page 2 of the specification, if the partition line runs over the diffractive surface relief pattern of the convex surface, as would be the case if the diffractive structure of Ueda was placed on the convex surface of Shiao and Meyers, any undesired deviation of either mold perpendicular to the direction of movement during the mold opening process would deform the diffractive structure of the plastic lens. If, however, the partition lines runs over the mold with the refractive surface as in the claimed invention, similar deviations

of either mold during the mold opening process would primarily affect the refractive surface that, because of its configuration, is less susceptible to deformation.

Accordingly, the diffractive structure of the plastic lens in the claimed invention is more likely to have the desired optical characteristics than the diffractive structure of the plastic lens of the prior art. Accordingly, because there is no motivation to combine Ueda with Shiao and Meyers as suggested by the Examiner, Applicants respectfully request withdrawal of the Section 103(a) rejection.

With regard to the rejection of claim 2 as being unpatentable over Shiao in view of Meyers and Ueda and further in view of Maruyama, Applicants assert that the Examiner has not shown that Maruyama remedies at least the aforementioned deficiencies of Shiao, Meyers, and Ueda as set forth above with respect to §103(a). Accordingly, because the Examiner has not provided a *prima facie* case of obviousness, as the Examiner has not shown how Shiao, Meyers, and Ueda in combination with Maruyama teaches or suggests every aspect of the claimed invention, Applicants respectfully request withdrawal of the rejection.

Applicants further submit that claims 2, 4, and 5 depend from independent claim 1, and are therefore allowable for at least the same reasons that independent claim 1 is allowable. In addition, at least some of the dependent claims recite unique combinations that are neither taught nor suggested by Shiao, Meyers, Ueda, Maruyama, or the cited art, and therefore at least some also are separately patentable.

For at least the aforementioned reasons, Applicants respectfully request withdrawal of the pending rejections and the allowance of claims 1, 2, 4, and 5.

In view of the foregoing remarks, Applicants submit that this claimed invention, as amended, is neither anticipated nor rendered obvious in view of the prior art references cited against this application. Applicants therefore request the entry of this Amendment, the Examiner's reconsideration and reexamination of the application, and the timely allowance of the pending claims.

The Office Action contains characterizations of the claims and the related art with which Applicants do not necessarily agree. Unless expressly noted otherwise, Applicants decline to subscribe to any statement or characterization in the Office Action.


In discussing the specification, claims, abstract, and drawings in this Amendment, it is to be understood that Applicants are in no way intending to limit the scope of the claims to any exemplary embodiments described in the specification or abstract and/or shown in the drawings. Rather, Applicants are entitled to have the claims interpreted broadly, to the maximum extent permitted by statute, regulation, and applicable case law.

Please grant any extensions of time required to enter this Amendment and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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